PATENT ABSTRACTS OF JAPAN

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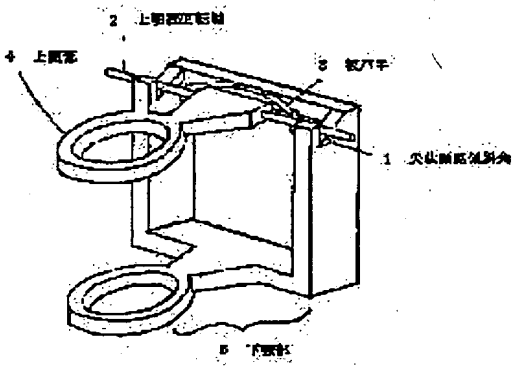
(71)Applicant : ICHINOMIYA KENJI
KAWANAKA MASAO
(72)Inventor : ICHINOMIYA KENJI
KAWANAKA MASAO

(54) FUNCTIONAL NON-ADJUSTABLE OCCLUSAL UTENSIL

(57)Abstract:
PROBLEM TO BE SOLVED: To provide an occlusal utensil which can provide a motion closer to a biomedical jaw motion, is inexpensive, and has a favorable operability in a non-adjustable dental occlusal utensil.
SOLUTION: This occlusal utensil comprises an upper jaw section 4 and a lower jaw section 5, and the rotating shaft 2 of the upper jaw section is pressed to the lower jaw section by a plate spring 3, and combined to the lower jaw section. The movable direction of the rotating shaft is set at back-upward 45° to the occlusal surfaces as a special feature. In this case, the angle is not limited to 45°, and an equivalent result can be obtained as long as the angle is set in a range of 40-55°.



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CLAIMS

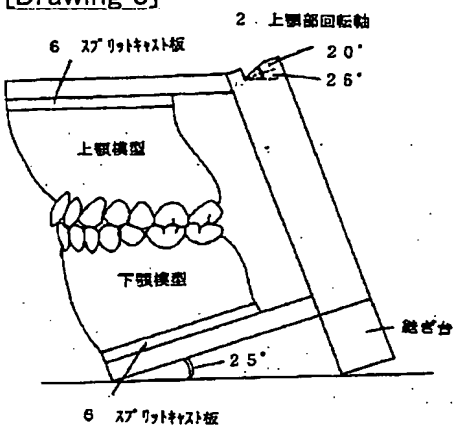
[Claim(s)]
[Claim 1] Non-adjustable occlusal pivot which makes 45 degrees an inclination-of-sagittal-condyle-path angle (1). An inclination-of-sagittal-condyle-path angle is a forward slope angle of the glenoid cavity of the temporomandibular joint, and the field which specifies the migration direction of a revolving shaft (2) says a plane of occlusion (= horizontal plane) and the angle to make in the articulator.
[Claim 2] The above-mentioned inclination-of-sagittal-condyle-path angle is non-adjustable occlusal pivot for dentistries which makes an inclination-of-sagittal-condyle-path angle (1) the include angle within the limits of 40-55 degrees since the same result will be obtained, if it is an include angle not only within the limits of 45 degrees but 40-55 degrees.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the non-adjustable occlusal pivot for dentistries which made 45 degrees the inclination-of-sagittal-condyle-path angle. Since this articulator carries out the motion near a motion of the jaw of the living body of the owner (= those to whom a gear tooth remains) of ****, it is very useful in the field of dentistry and dentistry artisan study.
[0002]
[Description of the Prior Art] The articulator for dentistries is equipment which makes a living body's mandibular movement reproduce, and using the articulator, dentist and a dental technician diagnose a patient's occlusion (= set your teeth) situation, and are manufacturing prosthetic dentistry restoration objects which were able to take a patient's jaw movement and harmony, such as a prosthesis and a crown. However, don't forget that it is equipment developed in order to express not the thing that can reproduce all the complicated mandibular movement but the specific location and specific movement path of a mandible required for artisan actuation (actuation which manufactures = prosthetic dentistry restoration object etc.). The articulator consists of the maxilla section (4) and the mandible section (5) (refer to = drawing 1) like the structure of human being's jaw. Although the plaster model of the row of teeth of a maxilla and a mandible is generally fixed to the maxilla section of the articulator, and the mandible section, respectively, in this case, it is in the condition with which the plaster model of an up-and-down row of teeth geared, and it fixes so that the occlusal surface (= tabling side) may become parallel to the base of the articulator (refer to = drawing 2). The maxilla section and the mandible section of the articulator pushed the revolving shaft (2) of the maxilla section against the mandible section by the flat spring (3), and have joined together. This revolving shaft is equivalent to the temporomandibular joint of the body. Human being's mandibular movement is actually prescribed by many anatomical factors, such as whenever [temporomandibular-joint section gestalt, occlusal-form / of a tooth / (gestalt of = tabling side), erection direction / of a tooth /, curve extent / of a row of teeth (= gear-tooth row) /, and contact angle / of the vertical jaw tooth of the anterior-tooth section]. Among this, the device of the temporomandibular-joint section is a point especially important when influencing the function of the articulator. Although other factors extract the gestalt information of the tooth form or each people called tabling by actuation of dental templating, it is because gestalt information of the each people of the temporomandibular-joint section and movement information are executed by proxy for the gestalt information given to the articulator, without taking. Therefore, various regulatory mechanisms are given to the articulator for dentistries from the former, and the work put close to a motion of a living body is carried out. However, if a regulatory mechanism increases, it will become indeed complicated and operability will get extremely bad. The articulator is classified into the adjustable occlusal pivot and the non-adjustable occlusal pivot according to the existence of a regulatory mechanism. Especially the thing produced with reference to the average of an anatomical gestalt in the non-adjustable occlusal pivot is called average movement articulator. Generally the other non-adjustable occlusal pivot is taken as the short form articulator. Usually at a daily clinical place, a short form and average movement articulator are used. The articulator in which only the hinge movement centering on a maxilla revolving shaft is possible among non-adjustable occlusal pivot can act as the monitor of the perpendicular contact relation of the tooth of a vertical jaw. Moreover, although it was developed in order that the type articulator with a revolving shaft movable to a cross

direction might reproduce the contact relation of the tooth at the time of movement to the front and the side of a mandible, the migration direction of a revolving shaft is being fixed to reference to the horizontal plane by the method of Gokami at the include angle between about 20-30 degrees in the average tilt angle (= about 30 degrees) of the temporomandibular-joint section of human being who saw anatomically.
[0003]
[Problem(s) to be Solved by the Invention] The old non-adjustable occlusal pivot had the following faults. When the non-adjustable occlusal pivot is used, also theoretically and experimentally, it is already shown except slight perpendicular movement of a vertical jaw that a patient's mandibular movement is not reproducible. As most typical example, where an up-and-down tooth is contacted, if the protrusive excursion (= movement projected with a jaw near at hand) of a mandible and the lateroduction (= movement to which a jaw is moved to right and left) are performed, on the articulator, the phenomenon in which the anterior-tooth section carries out dehiscence contrary to a living body will occur. Although it is in the condition engaged under the top, and it can actually experience easily that only an anterior tooth contacts and a molar (= molar) carries out dehiscence if its mandible is projected ahead, on the articulator, a molar will hit conversely and an anterior tooth will carry out dehiscence. Why will such contradiction occur? It is what happened since the conventional articulator adhered to copying the temporomandibular-joint section of the body in gestalt. When moving a jaw ahead, although the gestalt of the temporomandibular-joint section does not specify the movement direction, it is considered to be because for the tilt angle (include angle of the range of 20-30 degrees) of the said division to be traditionally adopted as the articulator. Thus, there is [that it is not expectable to recover the function in which the living body was lost etc. even if it equips a patient with the orthoprosthesis produced using the articulator which carries out a different motion from a living body, and] a possibility of inducing the malfunction of a jaw to ******, on the contrary.
[0004]
[Means for Solving the Problem] the very high non-adjustable occlusal pivot of every day and versatility -- using -- in addition -- in order [and] to enable manufacture of the prosthetic appliance which lost the occlusion interference at the time of the protrusive excursion of a mandible, or the lateroduction (= the failure of tabling), and suited the living body more -- a gestalt -- though it differs from the living body anatomically, I think it important that an equivalent function is secured functionally. Then, the articulator which changes to the include angle between 20-30 degrees as an inclination-of-sagittal-condyle-path angle of the temporomandibular-joint section used from the former, and is made into 45 degrees was made. (Drawing 1) .
[0005]
[Function] usually, a passage -- a plane of occlusion -- about [of the top face and inferior surface of tongue of the articulator] -- a model is fixed so that it may come to one half of height, and so that it may become parallel to an articulator base (drawing 2). A motion of the maxilla section centering on a revolving shaft (2) is possible in this condition, and the perpendicular contact relation of a tooth is known. The protrusive excursion of a mandible is reproducible by pushing aside the maxilla section back against a flat spring (3) on the articulator. At this time, the model of a mandible moves caudad a front along the rear face of the tooth of the maxilla anterior-tooth section. In the articulator of this invention, since the revolving-shaft section also moves in the almost same direction as the migration direction where an inclination-of-sagittal-condyle-path angle (1) is 45 degrees, and the mandible section is specified in the maxilla anterior-tooth section, the dehiscence of the vertical jaw in the molar section starts promptly. This is well in agreement with the phenomenon which has happened with the living body.
[0006]
[Example] A living body's jaw movement and movement which corresponded well are reproducible by setting the inclination-of-sagittal-condyle-path angle given to non-adjustable occlusal pivot, such as existing average movement articulator and short form articulator, as 45 degrees. Moreover, the same result was obtained when the inclination-of-sagittal-condyle-path angle was within the limits of not only 45 degrees but 40-55 degrees.
[0007]
[Effect of the Invention] This articulator does not have occlusion interference (= the failure of tabling) of the molar section not only at reappearance of the tooth at the time of closing motion of a jaw contact-related [perpendicular] but at the time of the protrusive excursion or the lateroduction, and can

[Drawing 3]



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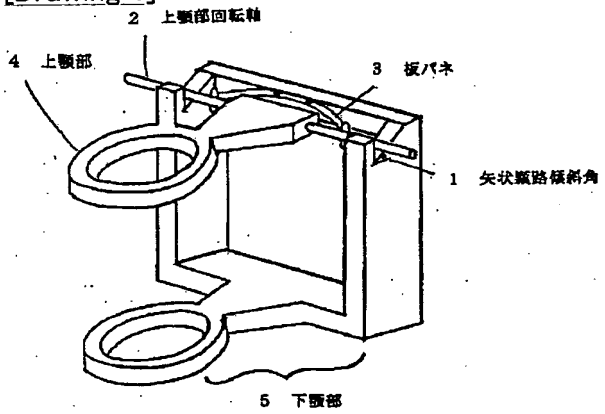
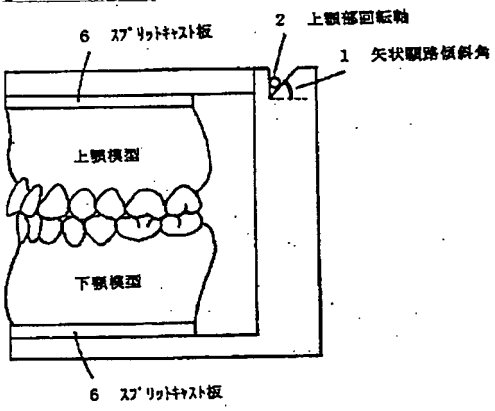
DRAWINGS

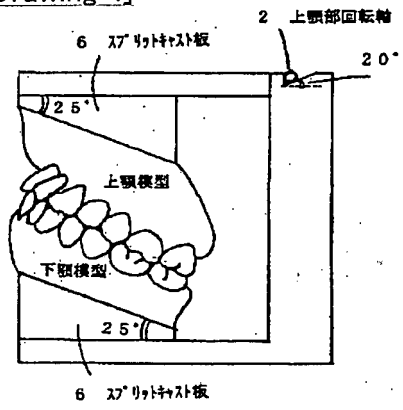
[Drawing 1]



[Drawing 2]



[Drawing 4]



DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The perspective view of the articulator for dentistries of this invention.
[Drawing 2] The side ** Fig. showing the example which equipped the articulator for dentistries of this invention with the vertical jaw model.
[Drawing 3] The side ** Fig. showing other examples of this invention. About 3cm splicer is formed in the non-adjustable occlusal pivot which has about 20-degree conventional inclination-of-sagittal-condyle-path angle. When about 25 degrees of articulator bases incline, a revolving shaft will move on a 45-degree inclined plane to the occlusal surface.
[Drawing 4] The side ** Fig. showing other examples of this invention. In case the non-adjustable occlusal pivot which has about 20-degree conventional inclination-of-sagittal-condyle-path angle is equipped with a vertical jaw plaster model, to a horizontal plane, 25-degree front is raised and it equips with the occlusal surface. Consequently, the revolving shaft of the maxilla section will move on a 45-degree inclined plane to the occlusal surface. In order to raise 25-degree front and to equip with a tooth model, the wearing plate (6) which gave whenever [tilt-angle] beforehand, and (= split cast plate) are used.
[Description of Notations]
1 Inclination-of-Sagittal-Condyle-Path Angle
2 Maxilla Section Revolving Shaft
3 Flat Spring
4 Maxilla Section
5 Mandible Section
6 Split Cast Plate

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reproduce the motion near actual living body movement.

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